3: Hart E-5 (1953-1954)1954 MX3 Rif MX3

The akhammās contract is the most common type, but also current is a slightly different class of association, called *ifarādhen* (Arabic *bil-fard*): two farmers who own plots of land more or less equal in size, but who do not have enough equipment to plow them on their own, join forces; the harvest is divided equally between the two parties. This form is particularly prevalent if each man concerned only possesses one cow or one mule. A third kind of association, called *dhūrī*, is very common in irrigable land; in this, one man supplies the land and half the seed, and the other the rest of the seed and the plowing equipment (animals and plow). The actual work, which may be done by an *akhammās*, and the payment of other hired personnel to help with the reaping, is taken care of by both parties, and the net profit, deducting one-fifth for the *akhammās*, is divided in half.

Except in the Bay of Alhucemas, where irrigation is practiced without terracing, and in the valley of the Upper Ghīs, where there is much terracing but little irrigation, irrigation ditches *(tharghu*, pl. *tharghiwīn)* and terraced fields, gardens and orchards are everywhere else to be found jointly in Aith Wuryāghil; the distribution of the one is virtually the same as that of the other. Ownership of irrigation water is largely dependent upon ownership of land, for in Aith Wuryāghil the owner of a plot of land is also the owner of the subsoil, and the waters which pass through his territory belong to him. Water is utilized by human beings, animals, lands and industries; rights of preference are in that order, the industries being represented by water mills (3), the owners of which receive one-tenth of the grain which the mills grind as their commission.

The Rīf, however, is a land not favored by nature, and water is a perennial problem. In Aith Wuryāghil, the people in the mountains receive first use of the water, while those in the Bay of Alhucemas irrigate with the remainder. The turns of each family in getting water are based on the principle of equal distribution, and natural means are used to calculate the time. Men have first call on water consumption, and the rest is reserved for women, for whom it is custo-

(3) Blanco Izaga, Emilio: **El Rif (2.ª parte-La Ley Rifeña): II. Los Cánones Rifeños Comentados**, Ceuta 1939, pp. 101-138.

454 Just as acquiring the capital for an investment has its own distinct forms, the actual investment itself appears to be motivated more often than not by social incentive rather than by profit. Aside from such investments as were mentioned in Chapters 3 and 4, we encounter investments which have, from the standpoint of industrial ideology, a more utilitarian aspect. 231 Thus, an extra mule or an ox can raise the level of productivity 454 of its owner. What more often occurs, however, is that in the 433 case of such prestige-laden animals, their effect is primarily 554 in the role of prestige and only secondarily in production. Perhaps the most dramatic representation of such investment are the animals which are purchased during the summer months. It is during this period that traveling is at its optimum, and owners leave their newly acquired livestock grazing conspicuously along the roadside for the public to observe. Unfortunately, work animals serve almost no productivity function during the summer months. With the commencement of winter, fodder supplies decrease and it becomes necessary to sell the extra animal before it can be put to a utilitarian purpose.

256 Another example of the primacy of the social incentive is 435 the business of milling. The turbine wheel mill powered by water 472 is one of the few nonagricultural enterprises which the fellah [376] engage in. The operation of a mill in the Rif bears little resemblance to the operations of a firm as a profit-making organization. In the first instance, cost for the service of a mill is not determined by any market factor, but by custom. The owner of

256 435 472 256 472 477 the mill collects a tenth of all the flour he processes, regardless of the level of demand or any market condition. While mills are not economically competitive with one another, they are socially competitive. As one informant put it: "My father was better than his, my grandfather better than his grandfather. If he has a mill, why shouldn't we?" If there is only one mill in a locality, which is a fairly rare circumstance, the entire community uses it. However, if there are two or more mills, the basis of [571] [578] [602] preference on the part of the users is not determined by convenience of location of the mill but in terms of social factors such as either ancient antagonisms stemming from the blood feuds of the past or familial alliance based on marriage or kinship.

423 427 Just as social motives and strictures lie behind the uses of capital, so too do they influence the regulation of labor. We see this in a series of sharecropping associations which arise between a man who has more property than he alone can personally cultivate (or who is prohibited from manual labor by his social and/or religious status, such as some shorfa) and a person who holds less land than he can cultivate to meet the subsistence needs of his family. The latter may or may not be a property holder, although usually he does have a small plot of his own. Land fragmentation through the peculiarities of Islamic inheritance has, however, reduced many plots to sizes too small to meet such subsistence needs as a family requires. In these circumstances [464] the Riffian hires out to those who have managed to keep larger estates or have acquired land through purchase.

464 Although the akhammas association is the most prevalent,
465 it is only one of several such arrangements. Another sort of laborer is the amkari, who is hired for sowing and odd jobs about the house. His salary is not fixed and he is apparently paid in cash and clothing (Hart 1956:75). Another type of traditional
[233] work association is the amikhan, who is a youth employed to herd a man's goats and sheep. He ". . . is hired for a fixed period . . . [and] gets a non-stipulated sum at the end of his contract" (Hart, ibid.:75). Such an arrangement is graphically portrayed in Bowles' translation of Charhadi's autobiographical novel, A Life Full of Holes. Another form of association is the arabba' who cultivates household gardens, orchards, and trees. He is given a fourth of the fruit and vegetable crops; if the terrain is difficult to terrace, his portion is adjusted (Hart 1956:75).
[256] Most mill owners employ an assistant to do the grinding, and from the mill owner's portion the worker receives a fourth of the grain.

The common element of this sort of association seems to be that the salary the laborer earns is determined by customary regulations rather than by the supply and demand of workers. It
[571] is an association between the elite and the poor which is based
[565] on a fixed compensation and outside of any regulation by the market economy.

675 A correlate of this situation in which commercial arrangements are based on social factors is the irrelevance of written contracts. Whereas contractual agreement forms the basis of most

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

the gradual decrease in the number of fruit and nut trees. The tribesmen of Jbala and the Atlantic littoral can count on adequate rainfall for a good cereal crop in most years. Moreover, since the summer weather is cooler and more humid than in the interior, crops do not suffer from excessive evaporation. Cereals in winter give way to summer crops of sorghum and chickpeas. The latter are not irrigated, and so there is no need for terracing. Slopes are covered with an irregular patchwork of cultivated plots without walls or ditches. Each hamlet is surrounded by cactus (*Opuntia Ficus-indica*), which is cultivated as a hedge and for its edible fruit.

Farm Implements

The implements used by Moroccan farmers are simple and few, for long-established habit opposes change. There are some general reasons for conservatism, such as the abundance and cheapness of manpower and the stagnation of industry. There are specific reasons as well: the prevalence of steep slopes, of small plots where only handwork is possible, and the difficulty of hauling heavy equipment through mountainous terrain. Implements are limited to mattocks, picks, hatchets, hoes, plows, grist mills, and equipment for pulping and pressing olives. Plowshares and other iron tools are made and repaired by local blacksmiths.

The Moroccan plow is a one-handled implement without wheels, colter, or moldboard. Wings are attached obliquely to either side of the share in order to widen the furrows, though not to reverse the sod. Since there is no harrow, clods are broken with hoes or clubs, and a second plowing is necessary to cover the seed. The share is made from a flat piece of iron hammered over at the edges to form a socket. The plow itself is much the same throughout the northern zone. The main regional difference is in the manner of yoking. In Jbala plows are fastened to the foreheads of cows or oxen (pl. 4, *b*); neck yoking is practiced elsewhere.[1] Mixed teams are common, combining donkeys, mules, or oxen, or one of these animals with a camel (pl. 4, *b*).

Figure 21 illustrates the main hand tools. The first four (*a–d*) are digging and weeding tools; the complex tool in the fourth sketch (*d*) seems to be restricted to Jbala, for the Sanhajans and Rifians are unable to give it a name. The fifth sketch (*e*) shows an all-purpose grubbing and cutting tool, which the women use to collect fuel and edible plants. Figure 20, *f*, is the hatchet used by woodcutters in Ktama; 20, *g*, is the ubiquitous sickle.

Milling is ordinarily accomplished with a rotary hand mill consisting of an upper stone, turned with a wooden handle, and a lower stone that remains stationary.[2] In areas of abundant runoff there are also vertical water mills, consisting of a turbine wheel attached to the upper of two millstones, a hopper mounted above the stone, and a feed slot jiggled by the upper stone to ensure an even flow (fig. 22). The lower stone is larger than the upper, and is rimmed with a slightly raised border, broken at one place to allow extraction of the flour.[3] Mills of this

[1] For other illustrations of Moroccan plows, see E. Laoust, *Mots et choses berbères: notes de linguistique et d'éthnographie* (Paris: Augustin Challamel, 1920), pp. 275–301.

[2] This type of mill is illustrated in Ernst Rackow, *Beiträge zur Kenntnis der materiellen Kultur Nordwest-Marokkos: Wohnraum, Hausrat, Kostüm* (Wiesbaden: Otto Harrassowitz, 1958), plate LI.

[3] The origin and evolution of the rotary hand mill and the turbine mill are discussed at length in L. A. Moritz, *Grain-Mills and Flour in Classical Antiquity* (Oxford: Clarendon Press, 1958).

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

Mills of this type are usually privately owned, and the owner collects one-tenth of the flour. When there is neither hand nor turbine mill, the women pound the grain with iron bars.

The implements used to press and pulp olives are similar to those used in Roman time.[10] The apparatus consists of a mill, a press, and a vat. The millstone lies against a centrally placed revolving post and is turned by means of a horizontal shaft with one end secured in the center post and the other projecting beyond the stone (fig. 23). Mills are used both for bruising the fruit before pressing and later to pulp the pressed fruit for use as cattle fodder. The larger mills are powered by animals, the smaller by hand. The essential part of the press is a large log, held in place by heavy wooden screws, which is forced down on baskets filled with olive mash.

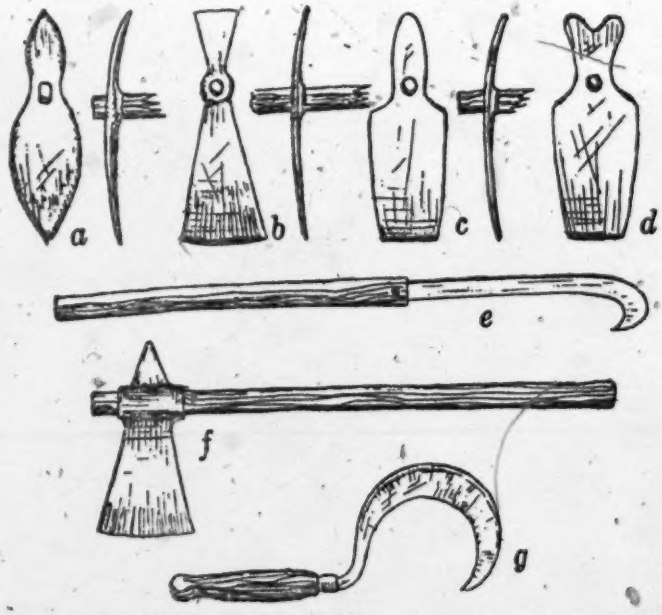

Fig. 21. Farm implements: *a*, *b*, *c*, *d*, digging and weeding tools; *e*, grubbing and cutting tool; *f*, hatchet used by woodcutters; *g*, sickle.

Role of Domestic Animals

In the statistical report of 1953 the number of domestic animals in Spanish Morocco is given as 1,104,000 goats, 661,000 sheep, 337,000 cattle, 55,000 donkeys, 22,000 mules, and 2,000 camels.[11] The number of goats nearly equals that of human beings. They are kept for their meat, milk, and hides. In many areas the number of goats is limited only by the amount of space available for storage of fodder and by the number of goatherds.

[10] H. Camps-Fabrer, *L'Olivier et l'huile dans l'Afrique romaine* (Algiers: Service des Antiquités, 1953).

[11] *Anuario estadístico, 1952–53*, p. 131, cited in note 1.

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
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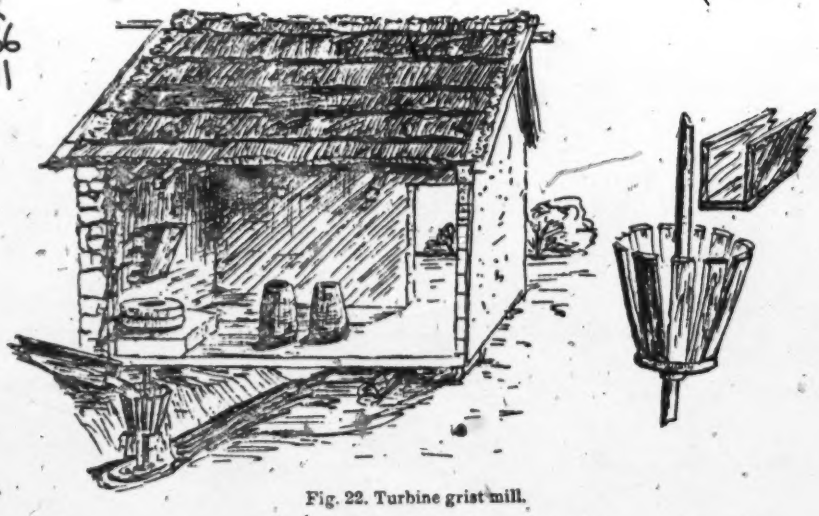

Fig. 22. Turbine grist mill.

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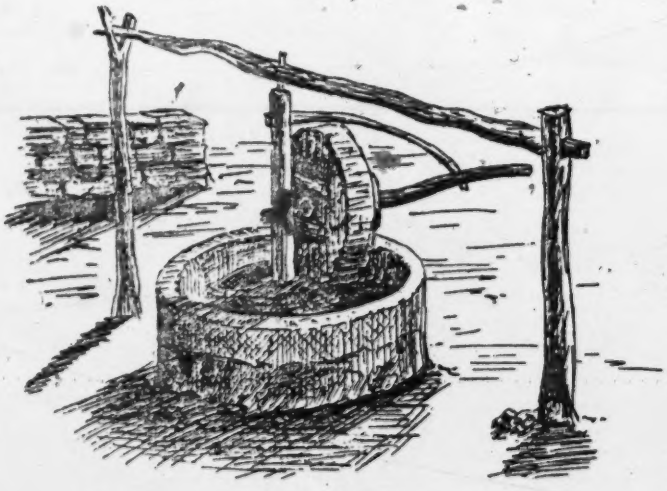

Fig. 23. Olive grinder.

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and by the number of goatherds. The situation in Ktama is representative of the entire highland area. In 1934 this mountain tribe, with a population of 8,389 persons, maintained 20,259 goats in an area of 450 square kilometers.[13] Goats must be brought back to shelter each night; so the radius of their movement is small. The effects of browsing on vegetation will be examined in chapter viii.

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The number of goats decreases toward the Atlantic lowlands and the plains

[13] Figures from an unpublished report of the Spanish *interventor* dated November, 1934.